

Notice of Allowability	Application No.	Applicant(s)	
	10/654,747	LITTLE, DAVID ALLEN	
	Examiner	Art Unit	
	Ehud Gartenberg	3746	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to papers filed through 2/14/2005.
2. ☒ The allowed claim(s) is/are 1-8 and 11-18.
3. ☒ The drawings filed on 05 September 2003 are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).**
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|---|---|
| 1. <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 6. <input checked="" type="checkbox"/> Interview Summary (PTO-413),
Paper No./Mail Date _____. |
| 3. <input type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08),
Paper No./Mail Date _____ | 7. <input checked="" type="checkbox"/> Examiner's Amendment/Comment |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit
of Biological Material | 8. <input type="checkbox"/> Examiner's Statement of Reasons for Allowance |
| | 9. <input type="checkbox"/> Other _____. |

EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Erik Swanson on 03/03/2005.

The application has been amended as follows:

Claim 1 has been amended as follows:

1. A method for maintaining blade tip clearances under part load turbine operation comprising the steps of:

operating a turbine engine under part load, the engine having a rotor with discs on which a plurality of turbine blades are attached;

supplying cool air to the rotor and discs at a ~~[substantially constant]~~ design ~~[rotor]~~ cooling-temperature for a design-load operation; and

reducing the temperature of the cooling air supplied to the rotor and discs to a temperature below ~~[the]~~ said rotor design-load ~~[rotor]~~ cooling-temperature,

wherein exposure to the reduced temperature ~~[rotor]~~ cooling air causes the rotor and discs to shrink~~[.]; and~~

wherein the cooling air exchanges heat with water of either one of an economizer or a condenser.

Claim 7 has been amended as follows:

7. A turbine engine assembly comprising:

a turbine engine having a compressor section, a combustor section and a turbine section, ~~[the compressor section having an inlet and an exit,]~~ the turbine section including a rotor with discs on which a plurality of turbine blades are attached, the engine configured so as to supply cooling air to the rotor and discs at a ~~[substantially constant]~~ design temperature when the turbine engine operates at design load[,]; ~~[wherein the engine is operating under part load condition; and]~~

a cooling circuit configured to reduce the cooling air temperature to a temperature below the design load cooling temperature[.] when the engine is operating under part load condition; and

wherein a heat exchanger of said cooling circuit uses water of either an economizer or a condenser as a heat sink.

Claim 8 has been amended as follows: on l. 2 of the claim, "a heat exchanger" has been changed to -- said heat exchanger--.

Claims 9 and 10 are canceled.

Allowable Subject Matter

2. Claims 1-8, 11-18 are allowed.

Conclusion

3. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Griffiths 6584778, Reiter 6532744, Yamanaka 6644035, Uematsu 6367242, Tubbs 6067792.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ehud Gartenberg whose telephone number is 571 272 4828. The examiner can normally be reached on Monday-Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cheryl Tyler can be reached on 571 272 4834. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Ehud Gartenberg
Primary Examiner
Art Unit 3746